**Daniel Foreman-Mackey**
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## Education

- *Ph.D. Physics*, **New York University**, New York, New York, USA 2010–
  Advisor: David W. Hogg
- *M.Sc. Physics*, **Queen's University**, Kingston, Ontario, Canada 2008–2010
  Advisors: Lawrence M. Widrow & David A. Hanes
  Thesis: Dynamical Constraints on the Mass of M31
- *B.Sc. Honours Physics*, **McGill University**, Montréal, Québec, Canada 2004–2008
  Advisor: Maria Kilfoil
  Thesis: Microrheology of Microtubule Networks

## Research Experience

- *Research Assistant*, Photometric calibration in the time domain 2010–
  New York University, New York, New York
  Advisors: David W. Hogg
- *Research Assistant*, Dynamical modeling using globular cluster kinematics 2008–2010
  Queen's University, Kingston, Ontario, Canada
  Advisors: Lawrence M. Widrow & David A. Hanes
- *Research Assistant*, Science Education Research and Development Apr.–Nov. 2008
  The WOW Lab at McGill University, Montréal, Québec, Canada
  Advisors: Brian Alters & Maggie Weller
- *Honours Thesis Project*, Microrheology of Microtubule Networks 2007–2008
  McGill University, Montréal, Québec, Canada
  Advisor: Maria Kilfoil
- *Undergraduate Research Assistant*, X-Ray Binaries & Globular Clusters Summer 2007
  Queen's University, Kingston, Ontario, Canada
  Advisor: David A. Hanes

## Teaching Experience

- *Laboratory Instructor*, Introductory Experimental Physics I (PHYS-UA 91) Fall 2011
  New York University, New York, New York
- *Laboratory Instructor*, Introductory Physics (PHYS 107) 2008–2010
  Queen's University, Kingston, Ontario, Canada

- *Grader*, Linear Algebra and Geometry (MATH 133) Winter 2009
  McGill University, Montréal, Québec, Canada

## Honors & Awards

- *Henry M. MacCracken Fellowship* 2010–
  New York University, New York, New York, USA
- *NSERC Undergraduate Summer Research Award* 2007
  Queen's University, Kingston, Ontario, Canada

## Talks & Posters

- *Oral Presentation* at **Galaxy Coffee at MPIA** Aug. 2011
  The Max Planck Institute for Astronomy, Heidelberg, Germany
  Title: Detecting the Undetectable: Photometric calibration in the time domain
- *Oral Presentation* at **The NYU Physics Department** Jan. 2011
  Computation physics final project
  Title: Self-Gravity and Dark Matter Interactions in Hydrodynamical Simulations
- *Oral Presentation* at **The CASCA Annual General Meeting** May 2010
  The Canadian Astronomical Society, St. Mary's University, Halifax, Nova Scotia, Canada
  Title: Parameters & Priors: The Mass & Transverse Velocity of M31
- *Poster Presentation* at **CITA@25/BOND@60** May 2010
  The Canadian Institute for Theoretical Astrophysics, Toronto, Ontario, Canada
  Title: Parameters & Priors: The Mass & Transverse Velocity of M31
- *Oral Presentations* at **the QUARG Journal Club** 2009 & 2010
  Queen's University, Kingston, Ontario, Canada
- *Oral Presentation* at **The Canadian Undergraduate Physics Conference** Sept. 2007
  Simon Fraser University, Vancouver, British Columbia, Canada
  Title: X-Ray Binary Systems Related to Globular Clusters

## Publications in Preparation

- **Daniel Foreman-Mackey** & Lawrence M. Widrow, *A Dynamical Study of M31*, for publication in ApJ (2012)
- **Daniel Foreman-Mackey** & David W. Hogg, *emcee: The MCMC Hammer*, for submission to arXiv (2012)

## Public Source Code

- `emcee` (`http://danfm.ca/emcee/`): A user-friendly Python implementation of the affine-invariant ensemble MCMC sampler from Goodman & Weare (2010). This code has been used in several published projects in the year since its release.

- acor (`http://github.com/dfm/acor/`): A Python implementation of the autocorrelation time estimation routine from Goodman & Weare (2010).
- ads_search (`http://danfm.ca/ads_search/`): An online service for intuitive searching of the NASA Astrophysics Data System.
- arXiv.IO (`http://arxiv.io/`): An interface to `arxiv.org` providing scientists with an online social network for the discussion and sharing of scientific results. This project also uses machine learning techniques to recommend papers to the users based on their interests.